

CLAIMS

1. Installation for venting the waste gases of an air distillation or liquefaction process, characterized in that it comprises a waste gas discharge stack (2) emerging in the atmosphere and suitable for discharging in particular oxygen at least intermittently and means for reducing the level of oxygen concentration in the gases discharged by the stack, these possibly consisting of means (13, 15) for mixing an inert gas, miscible with oxygen and of lower density than oxygen under the same temperature and pressure conditions, preferably of lower density than air under the same temperature and pressure conditions, with the gases discharged.
2. Installation according to Claim 1, comprising a chamber (13) for almost permanently discharging into the atmosphere the inert gas miscible with oxygen and of lower density than air under the same temperature and pressure conditions, and means (15) for connecting the respective internal spaces of the discharge chamber (13) and of the stack (2) in order to transfer at least some of the said inert gas into the stack (2) so that inert gas is mixed with at least the oxygen in the stack, and thus the level of oxygen concentration of the gases discharged by the stack is reduced.
3. Installation according to Claim 1 or 2, characterized in that the discharge chamber (13) is a chamber forming part of a water-nitrogen tower (1).
4. Installation according to any one of Claims 1, 2 and 3, characterized in that the inert gas is nitrogen, argon, air or a mixture of these gases.

5. Installation according to Claim 2, 3 or 4, characterized in that the discharge chamber (13) forms part of a water-nitrogen tower (1) placed alongside the stack (2), and the internal spaces in the chamber (13) and in the stack (2) are separated by a partition (3) having, as means for connecting the internal spaces, an outlet (15) for discharging, into the stack, the wet nitrogen contained in the chamber.

6. Installation according to either of Claims 1 and 5, characterized in that the stack (2) is equipped internally with a set of nozzles (25) through which some or all of the gas introduced into the base of the stack flows.

7. Installation according to either of Claims 1 and 6, characterized in that the connecting means (15) comprise a discharge outlet provided in a partition (3) separating the internal spaces in the chamber (13) and in the stack (2), and the stack is equipped internally with a set of nozzles (25) arranged in such a way that the top of it is at a level below the top of the discharge outlet (15).

8. Installation according to either of Claims 1 and 7, characterized in that the discharge chamber (13) belongs to a water-nitrogen tower (1) having, near its base, a dry nitrogen feed pipe (11) and, in its upper part, a pipe (12) for feeding the hot water to be cooled, above the level of which a wet nitrogen discharge outlet (15), opening into the stack (2), is provided.

9. Installation according to either of Claims 1 and 8, characterized in that the stack (2) includes, near its base, an air feed pipe (21) and/or a nitrogen feed pipe (22) and/or an oxygen feed pipe

(23) and/or a pipe for feeding another gas coming from the distillation.

10. Method for venting oxygen-containing waste gases
5 via a discharge outlet (24) of a stack (2) of an
air distillation or liquefaction unit,
characterized in that wet or dry nitrogen is mixed
with at least the oxygen and the oxygen/nitrogen
mixture obtained is discharged with a velocity at
10 least equal to approximately 7 m/s at the
discharge outlet (24).
11. Method according to Claim 9, characterized in that
the oxygen/nitrogen mixture obtained is discharged
15 with a velocity at least equal to approximately
10 m/s at the discharge outlet (24).
12. Method according to Claim 10, characterized in
that the oxygen/nitrogen mixture obtained is
20 discharged with a velocity at least equal to
approximately 12 m/s at the discharge outlet (24).
13. Method according to Claim 11, characterized in
that the oxygen/nitrogen mixture obtained is
25 discharged with a velocity at least equal to
approximately 20 m/s at the discharge outlet (24).